REMARKS

Claims 1-4, 7-8, and 10-12 have been amended. The application includes claims 1-8, 10-12, and 15-16.

Claims 1-8, 10-12, and 15-16 were rejected as being indefinite. To address any confusion from the preamble, it has been clarified that the invention is focused on operations performed in an exhaust gas purification system which treats exhaust gas that includes organosilicon compounds. Paragraphs [0002] and [0003] discuss treatment of exhaust gases, and notes that this is referred to in the trade as "thermal exhaust gas purification" or "thermal postcombustion". Paragraph [0003] refers to operation of these apparatuses and paragraph [0014] discusses treatment of exhaust gases. As explained in paragraph [0015] the invention allows for handling of adhesions which result from organosilicon compounds.

As discussed in the previous amendment, the present invention is focused on solving the problem of clogged regenerator-storage materials during regenerative post-combustion of exhaust gases containing organosilicon components. As explained on page 2, lines 22-27, prior regenerative post combustion (RPC) processes suffered from the regenerator storage materials being coated with the oxidation product SiO_2 when organosilicon products are present in the exhaust gases. This coating which occurs clogs the regenerator materials (e.g., a monolithic honeycomb) and, in prior art systems, necessitates a shut down and intensive laborious process for cleaning. As a result, in prior art RPC systems, the treatment of exhaust gases laden organosilicon compounds was typically not offered (e.g., as noted on page 2, lines 35-36, this treatment was ruled out in technical offer documents).

The claimed invention employs a storage material that is at least partly a bed (see page 5, line 3). That is, the storage material bed includes, for example, ceramic or steel spheres, pebbles, expanded clay, larva, etc. Claim 1 now recites, treating said exhaust gas in a regenerator with a heat storage material at least a portion of which forms a bed. As explained on page 6, lines 6-8, the regenerative preheating and cooling as well as the oxidation of the exhaust gas are effected within the regenerator

bed. As explained on page 7, lines 5-6, the storage material may also include conventional elements such as honeycombs. As explained on page 7, lines 19-35, the invention includes a removable bed connected to the discharge or an RPC or TPC plant. When removed through the discharge, the materials of the bed are provided to a separation apparatus which separates silica adhesions by friction, pressure spraying, ablative methods, etc. Thereafter, the purified bulk storage material is recycled to the regenerator. Claim 1 highlights this by reciting

removing at least a portion of said heat storage material of said bed from said regenerator after adhesions are formed on said heat storage material from oxidation of said organosilicon compounds;

purifying the heat storage material removed from said regenerator by removing adhesions from said heat storage material; and

re-introducing the heat storage material purified in said purifying step into the regenerator to refill the bed for retaining oxidation products of the organosilicon compounds in the form of adhesions on the heat storage material.

Figure 1 shows the bed being removed through discharge 15; purification at the separation apparatus 16; and refilling of the regenerator bed 1 at 18 via means of a transport device 17. As explained on page 9, lines 28-32, and with reference to Figure 3, the oxidation product SiO_2 of organosilicon compounds in the exhaust gases form amorphous adhesions on the storage material. This also occurs in the reverse flow pattern shown in Figure 4. As explained on page 10, lines 18 et seq., over the course of time, the silica adhesions build up and thus increase flow resistance. In a preferred manner, when a threshold pressure drop is detected, the bed is cooled, and the bed material with the adhesions is removed via discharge 15 and cleaned (see Figure 6) by the separation apparatus 16, and, after separation of the SiO_2 adhesions, the storage material is passed back into the regenerator at 18. Thus, the claimed invention makes it possible to remove, purify and re-introduce the heat storage material under operating conditions.

The amendments address the issues raised for claims 1, 3 and 12, and should make all claims at issue in compliance with the requirements of 35 U.S.C. 112,

second paragraph.

Claims 1-8, 10-12, and 15-16 were rejected as bing obvious over Japanese Patent JP 2002-061822 (JP '822) in view of U.S. Patent 4,940,567 to Ohlmeyer. This rejection is traversed.

In the office action, the Examiner makes the following conclusions with respect to JP '822

a) exhaust gas containing organic silicon is treated

b) at low temperatures, silicon adheres to the heat storage element, and at high temperatures these products can be removed

c) periodic cleaning is required

d) more than one regenerator, each of which has a heat storage element, can be used to treat exhaust gas.

Assuming arguendo that each of these conclusions were correct (this point not being conceded), these conclusions do not teach or suggest the claimed invention. Rather, they highlight the problem that regenerators get clogged by exhaust gases containing organic silicon, and they teach a totally different method than is set forth in the claims of the present application to address the problem. That is JP '822 addresses the problem by using more than one regenerator and adjusting the temperature in the other regenerator to more easily remove the silicon.

What JP '822 wholly lacks are the following (all of which are recited in the claims):

A) use of a regenerator with a heat storage material where at least a portion of a heat storage material forms a bed–JP'822 has no bed of material whatsoever. Rather, JP '822 has prior art style heat generative elements that must be cleaned periodically, and JP '822 addresses the problem by having two regenerators and operating one regenerator at specified temperatures when the heat generative elements are being cleaned.

B) removing at least a portion of said heat storage material of said bed from said regenerator after adhesions are formed-in JP'822, there is no bed of material, and nothing is removed after adhesions are formed. Rather, in JP'822, the temperature in

one regenerator is adjusted in order to make adhesions easier to remove from the heat generative elements in that regenerator.

C) purifying the heat storage material removed from said regenerator-in JP'822, the heat storage material is not removed from the regenerator; thus, there can be no purifying of a removed material in JP'822.

D) re-introducing the heat storage material into the regenerator after purification-in JP'822, the heat storage material is not removed; therefore, it cannot be reintroduced in the regenerator.

In short, every step required in the claims is missing from JP'822. Rather, all that JP'822 has in common with the invention is recognition of a problem. JP'822 proposes a completely different way to address the problem.

Ohlmeyer cannot make up for the deficiencies of JP'822 because JP'822 lacks every element of the claim is missing from JP'822.

Furthermore, Ohlmeyer pertains to catalyzing reactions that reduce noxious substances in flue gas (e.g., ammonia and Nox–see column 3, lines 46-50). In Ohlmeyer, there are elements that are coated with a catalyst, that are heated by flue gas, and which catalyze the reduction of noxious substances. When these elements are spent (i.e, poisoned so that they cannot catalyze the desired reaction), they are either discarded or regenerated. What is not happening in Ohlmeyer is

A) formation of adhesions on said heat storage material from oxidation of said organosilicon compounds, and

B) removal of the adhesions from the heat storage material.

The heat storage elements of Ohlmeyer comprise catalytically active catalyst coated heat storage elements and regeneration reflects regeneration of the catalytic activity of the catalyst only. Ohlmeyer does not describe a problem similar to purification of heat storage elements having adhesions on the surface derived from organosilicon compounds.

Since no combination of the references would result in a system meeting all of the requirements of the claims, the claimed invention would not be obvious to one of ordinary skill in the art. Furthermore, since, JP'822 and Ohlmeyer are focused on

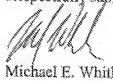
totally different processes (i.e., dealing with organosilicon compounds in a regenerator versus removal of noxios (ammonia and Nox) from a flue gas), the combination would not produce or make obvious the claimed invention.

In view of the foregoing, it respectfully requested that the application be reconsidered, that claims 1-8, 10-12, and 15-16 be allowed, and the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,



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